

Atty. Docket No.: RMWR.P010

Patent 10/635,804

IN THE CLAIMS

Please amend the claims as indicated below:

1        1. (currently amended) A method for controlling wireless network traffic,  
2 comprising:  
3            determining when a roaming mobile station initiates a registration attempt with a  
4 non-preferred network, wherein initiating comprises the mobile station sending a  
5 message to a Home Public Mobile Network (HPLMN) to update its location; and  
6            sending a response to the mobile station indicating that the registration attempt is  
7 terminated, wherein the response comprises an error message.  
8            ~~causing the roaming mobile station to initiate a registration attempt with a~~  
9 ~~preferred network.~~

1        Claims 2-12 (cancelled)

1        26. (new) The method of claim 1, wherein determining when a roaming  
2 mobile station initiates a registration attempt with a non-preferred network comprises  
3 reading a location update request from the mobile station.

1        27. (new) The method of claim 26, wherein the error message comprises a  
2 message that an update location transaction is aborted.

1        28. (new) The method of claim 26, wherein the error message comprises  
2 timing out a response to the location update request.

1        29. (new) The method of claim 1, wherein determining when a roaming  
2 mobile station initiates a registration attempt with a non-preferred network comprises  
3 reading an authentication request from a visited network.

1        30. (new) The method of claim 29, wherein the error message comprises a  
2 message that a send authentication information transaction is aborted.

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1           31. (new) The method of claim 29, wherein the error message comprises  
2 timing out a response to the authentication request.

1           32. (new) The method of claim 26, wherein the error message comprises a  
2 message that roaming is restricted.

1           33. (new) The method of claim 1, further comprising:  
2           the mobile station initiating a subsequent registration attempt with a subsequent  
3 network;

4           if the subsequent network is determined to be a non-preferred network, sending  
5 the response to the mobile station indicating that the registration attempt is terminated;  
6 and

7           if the subsequent network is determined to be a preferred network, proceeding  
8 with the registration attempt, wherein the mobile station is not aware of which networks  
9 are preferred and which networks are non-preferred.

1           34. (new) A system for directing roaming network traffic, the system  
2 comprising:

3           a Home Public Mobile Network (HPLMN) that is a home network of a mobile  
4 station;

5           a Visited Public Mobile Network (VPLMN) configured to communicate with the  
6 HPLMN via a signaling network, wherein the mobile station is roaming when in the  
7 VPLMN; and

8           a traffic redirection node configured to monitor signaling between the HPLMN  
9 and the VPLMN, including determining when the mobile station is roaming in the  
10 VPLMN and whether the VPLMN is a preferred network, wherein if the VPLMN is not a  
11 preferred network, the HPLMN sends a message to the mobile station to terminate a  
12 current transaction between the VPLMN and the HPLMN.

1           35. (new) The system of claim 34, wherein the transaction is selected from a  
2 group comprising:  
3           an update location transaction;

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4           a request for authentication information; and  
5           a message indicating that the current transaction is timed out.

1           36. (new) The method of claim 34, wherein:  
2           the mobile station is configured to receive the message and in response, attempt to  
3           register with a subsequent VPLMN, wherein the mobile station is not aware of which  
4           networks are preferred and which networks are non-preferred; and  
5           the traffic redirection node is further configured to monitor signaling between the  
6           HPLMN and the subsequent VPLMN, including determining whether the subsequent  
7           VPLMN is a preferred network, wherein if the VPLMN is not a preferred network, the  
8           HPLMN sends a message to the mobile station to terminate a current transaction between  
9           the VPLMN and the HPLMN.

10          37. (new) The method of claim 34, wherein the traffic redirection node  
11          comprises high impedance probes on SS7 links between the HPLMN and the VPLMN,  
12          and wherein the traffic redirection node is configured to passively monitor SS7 MAP  
13          signaling on the SS7 links.

1           38. (new) The method of claim 34, wherein the traffic redirection node  
2           comprises high impedance probes on SS7 links between the HPLMN and the VPLMN,  
3           and wherein the traffic redirection node is configured to actively monitor SS7 MAP  
4           signaling on the SS7 links, wherein actively monitoring includes the traffic redirection  
5           node triggering messages to the mobile station and modifying messages exchanged  
6           between the HPLMN and the VPLMN.

1           39. (new) A computer-readable medium having instructions stored thereon  
2           which, when executed in a wireless communication network, cause elements of the  
3           network to control wireless network traffic, controlling comprising:  
4           determining when a roaming mobile station initiates a registration attempt with a  
5           non-preferred network, wherein initiating comprises the mobile station sending a  
6           message to a Home Public Mobile Network (HPLMN) to update its location; and  
7           sending a response to the mobile station indicating that the registration attempt is  
8           terminated, wherein the response comprises an error message.

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1        40. (new) The method of claim 39, wherein determining when a roaming  
2 mobile station initiates a registration attempt with a non-preferred network comprises  
3 reading a location update request from the mobile station.

1        41. (new) The method of claim 39, wherein the error message comprises a  
2 message that an update location transaction is aborted.

1        42. (new) The method of claim 39, wherein the error message comprises  
2 timing out a response to the location update request.

1        43. (new) The method of claim 39, wherein determining when a roaming  
2 mobile station initiates a registration attempt with a non-preferred network comprises  
3 reading an authentication request from a visited network.

1        44. (new) The method of claim 39, wherein the error message comprises a  
2 message that a send authentication information transaction is aborted.

1        45. (new) The method of claim 43, wherein the error message comprises  
2 timing out a response to the authentication request.

1        46. (new) The method of claim 40, wherein the error message comprises a  
2 message that roaming is restricted.

1        47. (new) The method of claim 39 further comprising:  
2              the mobile station initiating a subsequent registration attempt with a subsequent  
3 network;  
4              if the subsequent network is determined to be a non-preferred network, sending  
5              the response to the mobile station indicating that the registration attempt is terminated;  
6              and  
7              if the subsequent network is determined to be a preferred network, proceeding  
8              with the registration attempt, wherein the mobile station is not aware of which networks  
9              are preferred and which networks are non-preferred.

1        48. (new) A wireless communication method, comprising:

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2           a mobile station sending a message to a Home Public Mobile Network (HPLMN)  
3       to update its location, wherein the message is used to determine whether the roaming  
4       mobile station is initiating a registration attempt with a non-preferred network; and  
5           if it is determined that the mobile station is initiating a registration attempt with a  
6       non-preferred network, the mobile station receiving a response from the HPLMN  
7       indicating that the registration attempt is terminated, wherein the response comprises an  
8       error message.

1       49. (new) A wireless communication system, comprising:  
2           a mobile station configurable to send a message to a Home Public Mobile  
3       Network (HPLMN) to update its location, wherein the message is used to determine  
4       whether the roaming mobile station is initiating a registration attempt with a non-  
5       preferred network; and  
6           a HPLMN configurable to determine that the mobile station is initiating a  
7       registration attempt with a non-preferred network, and further configurable to send an  
8       error message to the mobile station indicating that the registration attempt with the non-  
9       preferred network is terminated.